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EXAMINER	
WOITACH, JOSEPH T	
ART UNIT	**PAPER NUMBER**
1632	

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/053,753	LAU, LESTER F.	
	Examiner	Art Unit	
	Joseph T. Woitach	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *65-81* is/are pending in the application.

4a) Of the above claim(s) *78-81* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *65-77* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *January 22, 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This application filed January 22, 2002, is a continuation of 09/142,569, filed April 2, 1999, now US Patent 6,413,735, which is a national stage entry of PCT/US97/04193, filed March 14, 1997, which claims priority to provisional application 60/013,958.

Applicant's amendment filed January 21, 2005, has been received and entered. Claims 1-64 have been canceled. Claim 67 has been amended. Claims 78-81 have been added. Claims 65-81 are pending

Election/Restrictions

Applicant's election without traverse of the species of SEQ ID NO: 4 and fragments thereof in the reply filed on July 19, 2004 was acknowledged. The restriction requirement for election of species was withdrawn.

Newly added claims 78-81 are drawn to several different methods of using a Cyr61 antibody. Newly submitted claims 78-81 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the antibody and methods of use are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case antibody can be used in other methods than those claimed such Western blotting.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 78-81 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

It is noted that the examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP 821.04. Process claims that depend from or otherwise include all the limitations of the patentable product will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.1 16; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1 .104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See Guidance on Treatment of Product and Process Claims in light of *In re Ochiai, In re Brouwer* and 35 U.S.C. 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain

the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. Failure to do so may result in a loss of the right to rejoinder. Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP 804.01.

This application contains claims drawn to a nonelected invention. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claims 65-81 are pending. Claims 65-77 are currently under examination.

Specification

The nucleotide sequence disclosure contained in this application complies with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825.

The amendment to the specification and supporting materials has addressed the basis of the objection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 66, 70-77 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Initially, it is noted that the amendment to the claims has addressed the specific basis of each of the other rejections made in the prior office action.

With respect to claim 66 it is noted that the claim has been amended to delete the recitation of "homolog", however the claims still recites "variant, analog and derivative of the sequence set forth in SEQ ID NO: 4". Applicants do not address the basis of the rejection set forth in the prior office action (see top of page 4, first specific rejection made under 35 USC 112, second paragraph). Claim 66 is indefinite because the metes and bounds of the terms variant, analog, and derivative are not clearly defined in the specification nor the art of record. The artisan can not determine the metes and bounds of the claims because how different or similar a sequence has to be to SEQ ID NO: 4 is not specifically defined. Claims 70-77 depend from claim 66 and fail to clarify the basis of the rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 65-69, 75-77 stand rejected under 35 U.S.C. 102(b) as being anticipated by O'Brien *et al.* (IDS ref C24).

Claims 65-69, 75-77 stand rejected under 35 U.S.C. 102(b) as being anticipated by Yang *et al.* (IDS ref C29).

Applicant notes the requirements for anticipation citing relevant case law and argue that the Examiner has failed to consider every limitation of the claimed invention. In particular, Applicants argue that Applicants does not have to demonstrate the claimed antibody is different from that disclosed in the cited art because the Examiner has failed to consider every element of the claim(s). See Applicant's amendment, page 6, section b. Applicant's arguments have been fully considered, but not found persuasive.

Initially, it is noted that claim 66 recites and encompasses any "variant, analog and derivative" of SEQ ID NO: 4, and broadly encompasses almost any sequence because of issues discussed above in the rejection maintained under 35 USC 112, second paragraph. However, more on point, clearly an artisan would consider the cyr61 sequence taught in the cited art to be either a variant, analog or derivative of the cyr61 set forth in SEQ ID NO: 4. For claim 66, and claims dependent therefrom, it is maintained that in light of the claimed invention, the antibodies disclosed in O'Brien *et al.* and Yang *et al.* anticipate the claims.

With respect to claims 65 and 67, it is unclear what limitation have not been considered. Applicants note that the cited references provide cyr61 sequences from other species, and do not contest the fact the references clearly demonstrate that the antibodies can be successfully in a variety of methodologies. It appears that what is at issue is that the references do not specifically teach that the disclosed antibodies that react with cyr61 will specifically react with the cyr61 set forth in SEQ ID NO: 4. Given the fact the antibodies in the cited references are polyclonal antibodies to cyr61, even though made to another species of cyr61, given the high amount of

identity/homology of cyr61 among species, a sample containing polyclonal antibodies to one species would most likely react with that of another. There is no guidance nor description in the instant specification in identifying or using sequences that are unique to SEQ ID NO: 4 as compared to those known in the prior art. It is important to note that claims broadly encompass binding any portion of SEQ ID NO: 4, and thus the portions of identical sequence would surely be recognized by antibodies generated to any species.

Applicant does not contest the homology between the cyr61 of various species, only that the examiner has failed to fully consider all the limitations of the claims. Further, it is argued that it does not have to be demonstrated that antibodies that bind human cyr61 will not also bind cyr61 of other species. This argument is not found persuasive because even the instant specification provides and uses anti-cyr61 antibodies from other species in the working examples (see for example Example 10-first paragraph).

As noted previously, O'Brien *et al.* characterize the expression of Cyr61 in cells. More specifically, O'Brien *et al.* teach antibodies that can be used for immuno-precipitation and Western blotting (see for example the results of Figure 7, page 3575). The Cyr61 sequence analyzed is disclosed in figure 1, and homology comparisons of the sequence taught by O'Brien *et al.* and that of SEQ ID NO: 4 indicate extensive homology. Moreover, O'Brien *et al.* teach that the Cyr61 protein isolated and characterized from other species also share extensive homology (also see sequence comparison provided in figure 1 of the present disclosure). Because of the extensive homology of Cyr61, antibodies that bind one species would likely bind that of other homologous sequences. Yang *et al.* characterize the expression of Cyr61 in cells. More specifically Yang *et al.* teach antibodies that can be used for Western blotting (see for

example the results of Figures 1 and 5). The Cyr61 sequence analyzed is disclosed in cited reference 10, and shares extensive homology with other known Cyr61 proteins known in the art (see sequence comparison provided in figure 1 of the present disclosure). Because of the extensive homology of Cyr61, antibodies that bind one species would likely bind that of other homologous sequences.

Where, as here, the claimed and prior art products have identical functional properties, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. See *In re Ludtke* 441 F.2d 660, 169 USPQ 563 (CCPA 1971). Whether the rejection is based on "inherency" under 35 USC 102, or "prima facie obviousness" under 35 USC 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products. *In re Best, Bolton, and Shaw*, 195 USPQ 430, 433 (CCPA 1977) citing *In re Brown*, 59 CCPA 1036, 459 F.2d 531, 173 USPQ 685 (1972). In this case, relying on the immunity of a host animal to generate antibodies to a protein administered to said host would result in antibodies to the same antigen. Based on the extensive homology of Cyr61 proteins known in the art, this method would result in antibodies that would recognize Cyr61 from multiple species.

For the reasons above and of record, the rejection is maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 65-77 stand rejected under 35 U.S.C. 103(a) as being unpatentable over O'Brien *et al.* or Yang *et al.* and Hoogenboom *et al.* (US Patent 5565332 A).

Applicant argues that the teachings of Hoogenboom *et al.* does not remedy the deficiencies of either O'Brien *et al.* or Yang *et al.* See Applicant's amendment, page 6, section c. Applicant's arguments have been fully considered, but not found persuasive.

Hoogenboom *et al.* is cited to demonstrate that given any antibody the artisan would be motivated with a reasonable expectation of success to provide other useful forms of the antibody. The reference is not relied upon to remedy the deficiencies of either O'Brien *et al.* and Yang *et al.* As reasoned above, the teachings of either O'Brien *et al.* or Yang *et al.* anticipate claims 65-69, 75-77 are discussed above.

Hoogenboom *et al.* teach a method of making a humanized antibody where the CDR of one antibody is substituted and inserted into the homologous region of a human antibody to provide the structural properties of a complete antibody. Hoogenboom *et al.* provide several reasons to generate a chimeric humanized antibody with a known specificity. Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to use the methods of Hoogenboom *et al.* to generate chimeric humanized antibodies to Cyr61. One having ordinary skill in the art would have been motivated to generate humanized antibodies for any one of the reasons discussed by Hoogenboom *et al.* as would be required for further use. There would have been a reasonable expectation of success given the general results Hoogenboom *et al.* to generate a chimeric antibody to other proteins, to adapt the

methodology to generate a Cyr61 specific antibody from sources such as O'Brien *et al.* or Yang *et al.*

Thus, for the reasons above and of record, the claimed invention as a whole was clearly *prima facie* obvious.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Amended claim 67 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 65. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

In the instant case, claim 67 has been amended to indicate that the claimed antibody binds a sequence of SEQ ID NO: 4, the exact same scope as 65. Previously, claim 67 encompassed binding to the other portion of the fusion protein, however as amended now, the scope of the sequence that the antibody can bind is exactly the same.

Conclusion

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Woitach whose telephone number is (571) 272-0739.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla, can be reached at (571) 272-0735.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group analyst Dianiece Jacobs whose telephone number is (571) 272-0532.

Joseph T. Woitach

Joe Woitach
AU1637